thereby providing possibilities of various application forms. That is, the invention provides an advantage that an interactive input/output environment can easily be advanced or enhanced.

What is claimed is:

1. An information input apparatus comprising:

a semi-transparent screen that functions as an operator input manipulation surface;

means for projecting a display image formed of visible light in a first wavelength range onto the semi-transparent screen;

means for irradiating the semi-transparent screen with electromagnetic waves in a second wavelength range different from the first wavelength range such that a portion of the electromagnetic waves in the second wavelength range passes through the semi-transparent screen into the space in front of the semi-transparent screen and, thereafter, is reflected by a manipulation body, back through the semi-transparent screen;

pickup means for receiving the electromagnetic waves in the second wavelength range and detecting input manipulations of the manipulation body both in a variable-distance space in front of a front surface of the semi-transparent screen and on the semi-transparent screen itself, wherein the pickup means produces a pickup signal based on the electromagnetic waves in the second wavelength range reflected back through the semi-transparent screen to; and

control processing means for generating detection image information corresponding to the input manipulation of the manipulation body based on the pickup signal, and for executing a control process for controlling the display image projected onto the semi-transparent screen.

2. The information input apparatus according to claim **1**, wherein the control processing means is so configured as to be able to recognize plural pieces of input manipulation information based on image states of the detection image information and to execute different control processes based on the respective pieces of input manipulation information.

3. The information input apparatus according to claim **1**, wherein the control processing means is so configured as to recognize the input manipulation information based on a particular image shape that is obtained as an image state of the detection image information.

4. The information input apparatus according to claim **1**, wherein the control processing means is so configured as to be able to recognize a hand or a finger of a human body as a subject of detection of the input manipulation information.

5. The information input apparatus according to claim **1**, further comprising projection display means provided so as to be able to project, onto the semi-transparent screen, an image of visible light in an wavelength range excluding the predetermined wavelength range of light or electromagnetic waves to be captured by the pickup means, wherein the control processing means executes, as the control process, a display image generation process for causing the projection display means to project a display image and a control on the projection display means.

6. The information input apparatus according to claim **5**, wherein the control processing means is so configured as to be able to generate the display image by using the detection image information.

7. The information input apparatus according to claim **1**, wherein the display image includes a menu picture, said control processing means configured such that input manipulations corresponding to one or more items within said menu causing the control processing means to execute a prescribed process.

8. The information input apparatus according to claim **1**, wherein an initial image having a predetermined content is set as the display image.

9. The information input apparatus according to claim **8**, wherein the control processing means has attribute information relating to an image content of a particular region in the initial image, and wherein when it has been judged that the particular region has been designated as the input manipulation information, the control processing means executes a control process so that the projection display means projects an image indicating the attribute information relating to the designated region.

10. The information input apparatus according to claim **1**, wherein the control processing means executes the display image generation process so that the display image is displayed in an area on the semi-transparent screen corresponding to a located position of a physical object on the semi-transparent screen or in a space near the semi-transparent screen.

11. The information input apparatus according to claim **1**, wherein the semi-transparent screen is formed by combining a material for forming a transparent screen and a material for forming a semi-transparent screen.

12. The information input apparatus according to claim **1**, wherein the semi-transparent screen constitutes a wall surface.

13. The information input apparatus according to claim **1**, wherein the semi-transparent screen has a curved surface.

14. The information input apparatus according to claim **1**, wherein the semi-transparent screen is disposed so as to constitute a table surface.

15. The information input apparatus according to claim **1**, further comprising pointing device means capable of causing a state variation in light or electromagnetic waves in the second wavelength range to be captured by the pickup means by irradiating the semi-transparent screen with electromagnetic waves in the second wavelength range.

16. The information input apparatus according to claim **1**, wherein the pickup means comprises a plurality of imaging means for producing imaging signals through photographing with different magnification factors, and wherein the control processing means executes the control process based on the detection image information that is generated based on imaging signals that are supplied from the plurality of imaging means.

17. The information input apparatus according to claim **16**, wherein the control processing means selects, according to a predetermined rule, a particular imaging region of an area of detection image information that is obtained based on an imaging signal produced by a predetermined one of the plurality of imaging means, and executes a control so that one of the imaging means that is different from the predetermined imaging means photographs an image in the particular imaging region with a varied magnification factor.

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